

Claims

1. A composition for transfecting a cell, which comprises one or more nucleic acid molecules, polycations or cationic polymers, and cationic liposomes or lipids.

5 2. The composition of claim 1, wherein said composition comprises two or more polycations or cationic polymers and cationic liposomes or lipids as transfection reagents.

3. The composition of claim 1, wherein said cationic polymers comprise polyethylenimines.

10 4. The composition of claim 1, wherein said cationic liposomes comprise a Dosper Liposomal Transfection Reagent.

15 5. The composition of claim 3, wherein said polyethylenimines are selected from polyethylenimines 700, 2K and 25K.

6. The composition of claim 3, wherein said polyethylenimines are especially low molecular weight polyethylenimines being ineffective alone and effective in combinations.

20 7. The composition of any one of claims 2 to 6, wherein the amount of transfection reagents is very low being inefficient when used alone.

8. The composition of claim 1, wherein the nucleic acids comprise plasmid DNA molecules containing one or more genes.

25 9. The composition of claim 4, wherein Dosper Liposomal Transfection Reagent is used at the charge ratios of liposome/DNA from 0.5 to 50.

30 10. The composition of claim 1, wherein the nucleic acids comprise DNA, RNA and synthetic nucleic acids including plain nucleic acids, genomic DNA, nongenomic DNA, nonviral expression plasmids, viral vectors and oligonucleotides.

11. The composition of any one of the claims 1 to 10 for use in transfecting a host cell of a subject with the nucleic acids comprising DNA, RNA and synthetic nucleic acids

including plain nucleic acids, genomic DNA, nongenomic DNA, nonviral expression plasmids, viral vectors and oligonucleotides.

12. The composition of any one of the claims 1 to 10 for use in transfecting a host cell
5 of a subject with a DNA plasmid containing one or more specific genes.

13. Use of the composition of any one of the claims 1 to 12 for synergistic potentiation of transfection efficiency.